User Manual

Operator chair Carl Mk2

- **Model R6 120-00133-00**
- **Model R7 120-00133-01**

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rini

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1. Operator chair Carl Mk2

Thank you for choosing the Rini Operator chair Carl Mk2.

Carl Mk2 is the second generation of Rini's popular electrically adjustable operator chairs where lots of user feedback and new technologies have been combined. The goal has been to provide a quality chair with a small foot print, maximizing the area around the feet often where pedals and other equipment are placed.

At the same time for the surgeon, Carl Mk2 offers maximum ergonomic comfort by extensive configuration options achieved by the use of intuitive hand grips.

The Carl Mk2 R6 is supplied with Rini's patented armrest "Rilis" that can be adjusted with high precision to the desired position. For safety reasons, adjustments require two-handed movement to adjust height and angle. The armrest board is able to pivot and slide as required.

The chair is battery operated and easy to raise and lower using buttons on the side. The single button control central brake provides a very stable operating position. A cover is supplied to protect the wheels frame. Overall, Carl Mk2 gives the surgeon a tailor-made work environment of the highest quality.

Rini is constantly improving existing products and developing new ones. Consequently, we value the professional user's point of view; so don't hesitate to let us know your opinion about any of our product lines.

2. Important – Before Use

To ensure patient safety and the lifespan of the product, it is important to observe the following instructions before use. Please read this manual carefully and understand how to use the product before you start.

2.1 Unpacking

Before the product is unpacked make sure that the packaging has not been damaged during transport. If so, document these with a picture and report this immediately to the transport company and your local Rini representative.

In the packages the chair is normally in the following parts:

- Complete chair with wheels and seat mounted
- Backrest

- Two armrests
- Battery charger
- Optional accessories
- User manual

Warning! Be careful when lifting the chair off the pallet. The chair is heavy and may cause injury. Avoid bumping it, this may cause material damage .

Remove the packing material such as plastic, tape, etc. from the chair.

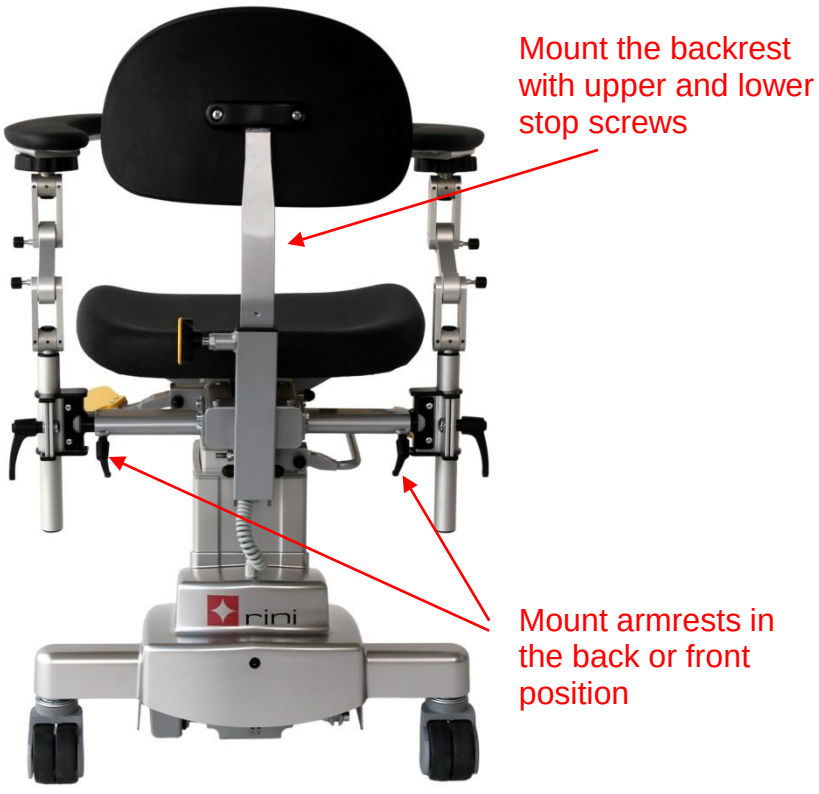
Warning! Do not use sharp tools when removing the packaging material. This may cause damage.

Make sure that the delivery includes all ordered parts. Contact your Rini sales representative if you find any discrepancies.

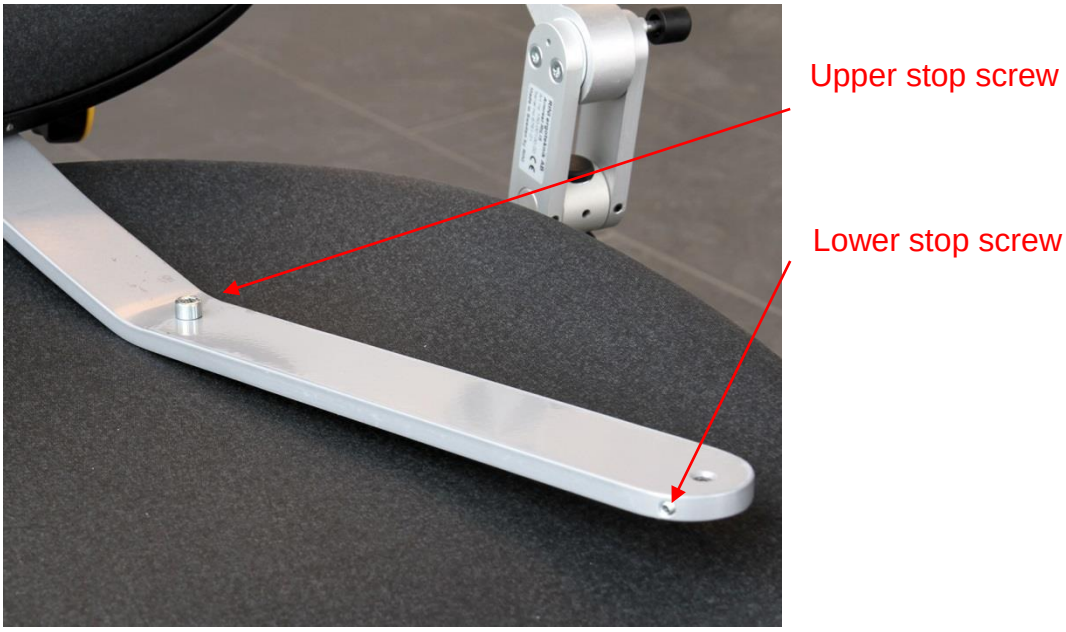
2.2 Installation

When you get the operator chair delivered, it is not ready to be used. It has to be mounted accordingly to this manual.

Place the chair on a stable floor. The brake on the back wheels are normally locked at delivery and the chair is in its lowest position. Release the brake (yellow button on the left side of the plastic cover seen from behind) and raise the chair to a suitable height (yellow buttons at the front wheel).



Adjust the armrests to a suitable width by pushing them into the brackets and thereafter tighten. Please note that there is a back and front position where the armrests can be mounted.



Install the backrest by first removing the upper stop screw. This allows the backrest to move sufficiently deep so the lower stop screw can be threaded out.

The lower stop screw is then threaded out so far that the backrest can´t be taken out completely but at the same time without scratching when the backrest is adjusted in height. The upper stop screw is then reassembled and covered with plastic cover.

For safety reasons including both person and product it is necessary to read this manual or having received sufficient training in using this product.

Before using the product, please check the following:

- That the product has not been damaged in transport.
- That adjustment of back, seat, height and armrest can be done according to this manual
- That the electrical brake is working
- That the battery is fully charged

Please contact your local Rini representative if you have any questions or concerns.

2.3 Intended areas of use

The operator chair Carl Mk2 with three wheels is developed for different types of microsurgery where the operator needs a stable seated work position with flexible relief for the arms.

The design of Carl Mk2 chair gives great freedom of movement to the surgeon while the chair provides space for other equipment at the feet.

Intended uses include:

- Neurosurgery
- Eye Surgery
- Ear, nose and throat surgery
- Facial Plastic Surgery
- Robotic Surgery
- Dental Surgery

The chair is intended for indoor use and use on floors with normal floor standard.

The chair may not be equipped with other accessories or components than those authorized by Rini Ergoteknik AB.

Repairs and other technical measures should only be performed by personnel authorized by Rini Ergoteknik AB.

The chair may only be used for the purposes specified in this manual. Any other use may pose a risk to the user.

The chair should not be used for operators that weigh more than 120kg. The wheels must be locked with the electric brake during surgery.

When transporting the chair, it should be empty and in its lowest position. The chair is not designed for person transports.

3. Product identification label

The label is located on the back of the chair and shows the product part number and its unique serial number. For questions about this product, always specify these numbers to facilitate identification.

Label description

	Warning risk exists. Read the information text in the user manual.
	Type B equipment with a defined degree of protection against electrical shock.
SWL	**Safe Work Load. The equipment should not be exposed to greater force (corresponding to x 0.1kg per N) than listed.**
Mode of operation	**Average relative operation/rest during a work cycle. Where 10% corresponds to 6 minutes operation per hour or 2 minutes continuous operation under full workload.**
Standard	**The equipment is manufactured in accordance with specified medical standard EN60601-2-46**

4. Basic adjustments of the chair

Carl Mk2 has simple, intuitive controls and buttons to adjust the chair to an effective and ergonomic working environment for the operator. For greater clarity, these are indicated in yellow.

4.1 Chassis, wheels and electrical brake

The chassis design with 3 wheels combine high availability of technical equipment on the floor with high stability. The chair can also be equipped with pedal trays as accessories. The chair is equipped with large high quality ball bearing wheels which facilitates movement.

The rear wheels are lockable by an electric brake which is controlled by a button (alternating with on and off) on the right side. When the brake is used a tone sounds.

Always activate the brake during surgery to prevent accidental movement of the chair.

4.2 Chair height adjustment

The seat is raised and lowered electrically where the lifting construction consists of a battery-powered motor, control box and a

battery pack. Seat height is controlled by two buttons on the sides of the front wheel, this by pressing with the heel on the buttons.

The chair may not be used by persons weighing over 120kg.

4.3 Seat angle adjustment

The chair is equipped with a lever on the right hand side to adjust the seat angle between -15º and +5º.

Adjust the seat to a comfortable position by lifting the lever which then locks in this position when it is dropped.

4.4 Backrest angle and height adjustment

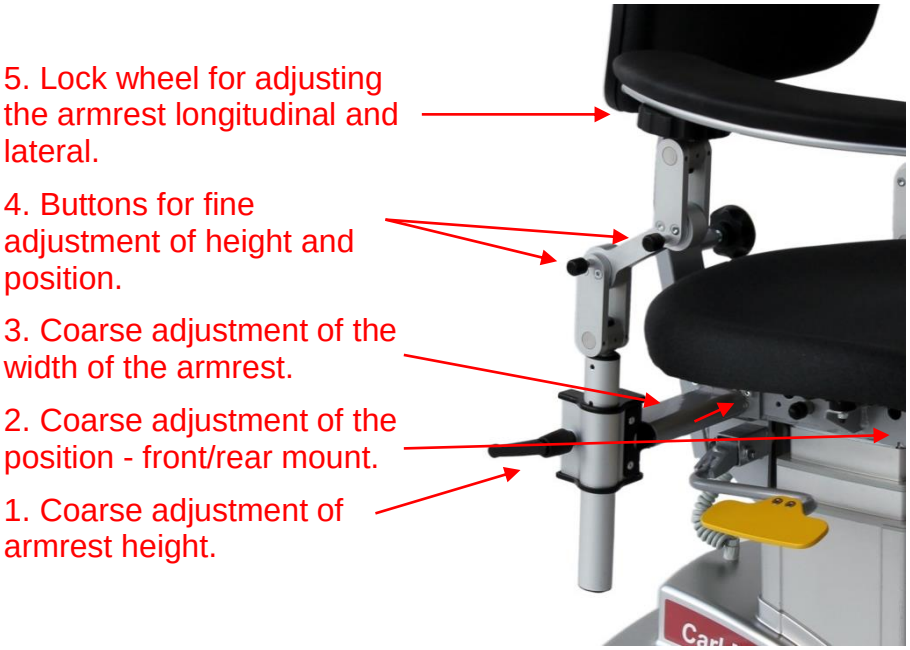
The chair is equipped with a lever on the left side to adjust the backrest angle between -15º and +20º.

Adjust the backrest to a comfortable position by lifting the lever which then locks in this position when it is dropped.

The backrest height adjustment device is placed on the back of the chair. Adjust the height by loosening the knob and lock a suitable position by tightening it again.

4.5 Rilis safety armrest – Model R6

Rinis patented safety armrest Rilis has five different settings to offer an optimal ergonomic working position.


5. Lock wheel for adjusting the armrest longitudinal and lateral.
4. Buttons for fine adjustment of height and position.
3. Coarse adjustment of the width of the armrest.
2. Coarse adjustment of the position - front/rear mount.
1. Coarse adjustment of armrest height.

Setting 1 (coarse setting)
There are two brackets on each side of the chair under the seat. Normally, the armrests are placed back of the chair but could be in any location on the right and left sides.

Setting 2 (coarse setting)
The width between the armrests can be adjusted by loosening the locking handle under the seat.

Setting 3 (coarse setting)
The height of the entire armrest can be adjusted so it is in the center of the work area for subsequent fine tuning. Use the locking handle to set the appropriate armrest height.

Setting 4
By pressing the buttons, the armrest can be adjusted for an optimal working position. To release the armrest you need to use two hands for safety reasons. One hand to move the armrest pad up and down, while the other hand push the button. Set the armrest in the desired position and release the button to lock the position. Note that the adjustment of the armrest should be without load.

Setting 5
The armrest plate is curved and underneath equipped with a rail. Loosen the black locking wheel to position the armrest. Tighten when the correct position is found. The armrest can also rotate around the black locking wheel, allowing maximum flexibility and ergonomic relief. It also helps the operator to be seated or get up from the chair and still be able to maintain sterile hands by using the elbows to rotate the armrests.

The Rilis armrest should not be loaded with more than 20 kg.

4.6 One hand grip armrest – Model R7

The R7 model is suitable when a limited adjustment range is needed and it is desired to be able to adjust the armrest with only one hand.

4. Lever for fine adjustment of the armrest position.

3. Coarse adjustment of the width of the armrest.

2. Coarse adjustment of the position - front/rear mount.

1. Coarse adjustment of armrest height.

Setting 1 (coarse setting)
There are two brackets on each side of the chair under the seat. Normally, the armrests are placed back of the chair but could be in any location on the right and left sides.

Setting 2 (coarse setting)
The width between the armrests can be adjusted by loosening the locking handle under the seat.

Setting 3 (coarse setting)
The height of the entire armrest can be adjusted so it is in the center of the work area for subsequent fine tuning. Use the locking handle to set the appropriate armrest height.

Setting 4
By pulling the lever upwards, the armrest can be adjusted to an optimal working position. Set the armrest in the desired position and release the lever to lock the position.

The armrest should not be loaded with more than 10 kg.

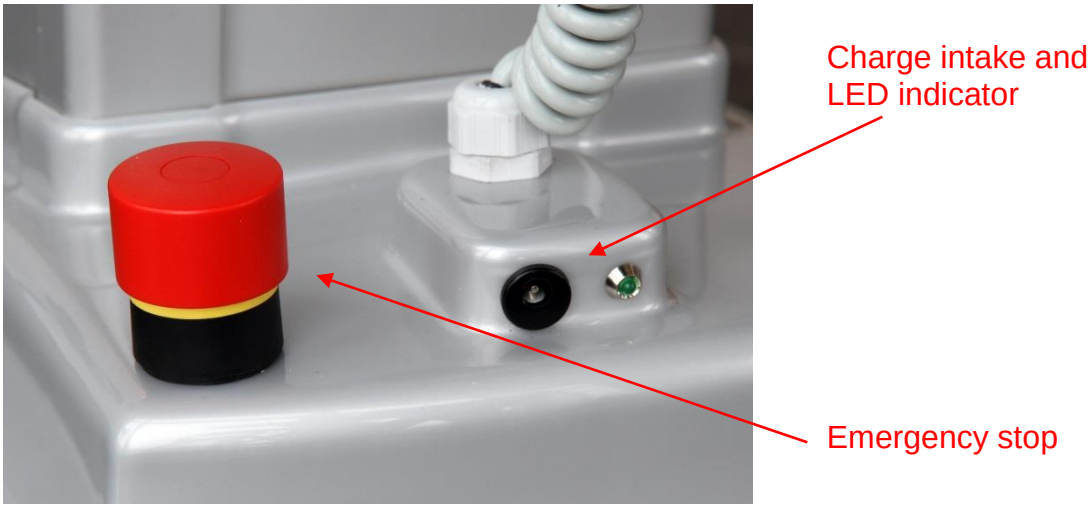
5. Battery, charging and emergency stop

The Carl Mk2 chair is battery powered and has its own custom battery charger that handles 100-240V AC power. The charging socket is located on the back with an LED to indicate charging status.

A fully charged battery is sufficient for about five days during normal operating conditions, but daily charging is recommended because full discharging of the battery reduces battery lifespan.

For optimal performance, the battery should be recharged frequently, preferably every night, and at least every three months to avoid damage caused by self-discharge.

A new or completely discharged battery must be charged for 24 hours. When the battery is fully charged, the charger switches automatically to maintenance charging to avoid overcharge.



The emergency stop must not be activated during charging.

Important that only the dedicated charger for the chair is used.

LED-indicator shows the following status:

Battery status	Green LED-indicator
Battery charging	Lit constantly
Battery OK	Unlit
Battery < 20%	During operation - blinking twice/sec and buzzer sound

If the overload breaker has tripped, activate the emergency stop and wait at least 10 minutes and make sure the charging cable is not connected. After that period of time the overload breaker should have been reset. Then release the emergency stop. If the chair is still not working, the battery is probably empty. Connect the charger and charge the chair at least 24 hours.

Batteries have a limited lifespan and battery module must during normal working conditions be replaced after about four years. A new battery module can be ordered from your local distributor or Rini.

Used batteries are recycled in accordance with the instructions provided for the lead-acid batteries.

6. Cleaning and Maintenance

No part of the equipment is normally in contact with the patient and the armrests are draped during surgery.

Recommended disinfectants

Part	Product	Other information
Seating and other parts of art leather or nylon.	Virkon (including most disinfectants **without** alcohol).	1% concentration. (Disinfectants containing alcohol cannot be used due possible to dehydration of the leather.)
Foot control and other electronic parts.	Noedischer Dekonta CCOTRADE RW (Including most disinfectants).	1-3% concentration 0,5% concentration

Recommended cleaning agents

Part	Product	Other information
Padding, wheels and frame **Parts of metal and lacquered surfaces**	Water and soap	Use damp cloth
Electronic parts, hand control, control box and battery.	Water	Use damp cloth
Battery charger	Water	Use damp cloth

Periodic maintenance

Monthly	
Hinges and joints	Use non-corrosive, standard instrument spray.
Armrest locking system	Use non-corrosive, standard lubrication spray.

Accessories

Please contact your local distributor or Rini for information about accessories available for your equipment.

Spare parts

Please contact your local distributor or Rini for information on spare parts available for your equipment.

Repairs

The equipment should only be repaired by Rini or a Rini authorised service centre. Equipment to be repaired under warranty must be sent to Rini factory or an authorised Rini service centre.

Warning! Any unauthorised repairs or modifications to the equipment may result in equipment malfunction. Furthermore, this will render the warranty null and void.

7. Safety

The Operator chair must only be used in accordance with its intended purpose as described in this manual. Incorrect use or deviation from the safety instructions could lead to damage of the equipment and/or personal injury.

This manual should always be available near the Operator chair.

Please observe the warning labels on the equipment.

Warning and other labels

The warning sign is used when there is a risk of severe danger to the patient, personnel or the system.

Statement of CE conformity

The Operator chair 120-00133-00 conforms to CE according to MDD 93/42 EEG.

Approved according to standard EN 60601-2-46 and EN 60601-1.

8. Technical specification

General	
Weight base unit	43 kg / 95 lbs
Length (chassis)	560 mm
Width (chassis)	560 mm
Electric	Battery operated – Charger 100 - 240 V
Cushions	Medical classified material - black colour (standard) or other colours as options
Operator data	
Lifting capacity	120 kg / 264 lbs (max weight operator)
Height adjustment	490 - 800 mm - foot control by buttons on the side
Back support	
Type	Standard H 250 mm x B 280 mm - other types

	as options
Inclination	Angle -15° till +20°
Height	200 mm till 300 mm from seat
Seat	
Type	Standard L 420 mm x B 460 mm - other types as options
Inclination	Angle +5° till -15°
Armrest	
Type	Rilis safety armrest
Shape	Boomerang (standard) - other types as options
Adjustment	Height, angle and length
Brake	
Type	Electric with on-button control for back wheels
Operational environment	
Temperature	+5ºC to +40 ºC
Relative humidity	20% to 90% at 30ºC
Atmospheric pressure	700 to 1060 hPa
Transport and storage	
Temperature	-10ºC to +50ºC
Relative humidity	20% to 90% at 30ºC
Atmospheric pressure	700 to 1060 hPa

9. Disposal and recycling

Rini Operator chairs are manufactured using environmentally friendly materials, mainly stainless steel, aluminum, PVC and plastics. Rini recommends that the equipment is demounted as far as possible for recycling purposes.

Battery

Used batteries are recycled in accordance with the instructions provided for the lead-acid batteries.

Electronic parts and cables

Electronic parts and cables are to be disposed of as electronic waste in accordance with local legislation.

10. Warranty

In accordance with Rini's general terms and conditions, the warranty on the equipment is one year from date of purchase.

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